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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/698,263	10/30/2003	Magnus Karlsson	200311960-1	2952

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EXAMINER
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GOLDEN, JAMES R

ART UNIT	PAPER NUMBER
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2187

DATE MAILED: 01/04/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b> 10/698,263	<b>Applicant(s)</b> KARLSSON ET AL.	
	<b>Examiner</b> James Golden	<b>Art Unit</b> 2187	

**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --**

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 30 October 2003.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-27 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 15-16, 21-27 is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☒ Claim(s) 17-20 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 30 October 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All    b) ☐ Some \*    c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>2/9/04, 5/19/04</u> . | 6) <input type="checkbox"/> Other: _____  |

### **DETAILED ACTION**

The instant application 10/698263 has a total of 27 claims pending. There are 4 independent claims and 23 dependent claims. Claims 1-14 have been rejected under statutory basis. Claims 15-27 are deemed allowable contingent on the satisfaction of formal requirements.

#### ***Information Disclosure Statement***

1. The information disclosure statement submitted on 02/09/2004 and 05/19/2004 are in compliance with the provisions of 37 CFR 1.97. Accordingly, the information disclosure statements have been considered by the examiner.

#### ***Drawings***

2. The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 712 of Fig. 7A.

3. Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for

consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

### ***Specification***

4. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed. The title "Method of Determining Bounds for Minimum Cost and Near-Optimal Location of Replica Data in Network Nodes" is suggested.

5. The disclosure is objected to because of the following informalities: the Application Numbers of the related applications are not given (page 1, line 4) and should be listed as --10698182, 10698264 and 10698265--; "(filed on the same day as this application)" (page 1, lines 5-6) should be corrected to --10/30/2003--; "allowable lime" (page 6, line 9) should be corrected. Appropriate correction is required.

6. The examiner respectfully requests that applicant correct the mention of figures in the disclosure (figure 1, figure 2, etc.) to read --Fig. 1-- and --Fig. 2--.

### ***Claim Objections***

7. **Claims 4 and 17-20** are objected to because of the following informalities.

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8. Claims 4 and 17 recite the limitation "minimize the cost" in line 2. There is insufficient antecedent basis for this limitation in the claims, and this statement should be corrected to read --minimize a cost--, as in claims 8 and 15.
9. Claims 18-20 refer to "the subset" (line 2) somewhat ambiguously, as there are two defined subsets; these should be corrected to --the first subset--, --the second subset-- and --the second subset--, respectively.
10. These objections can be overcome by making the appropriate corrections.

### ***Claim Rejections - 35 USC § 101***

11. 35 U.S.C. 101 reads as follows:

Whoever invents or discovers any new and useful process, machine, manufacture, or composition of matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the conditions and requirements of this title.

12. **Claims 1-14** are rejected under 35 U.S.C. 101 because the claimed invention is an abstract method and therefore the claims are directed to non-statutory subject matter.

### ***Allowable Subject Matter***

13. **Claims 15-16 and 21-27** are allowed.
14. As allowable subject matter has been indicated, applicant's reply must either comply with all formal requirements or specifically traverse each requirement not complied with. See 37 CFR 1.111(b) and MPEP § 707.07(a).
15. The following is a statement of reasons for the indication of allowable subject matter.

16. **With respect to claim 15**, the claim limitations are deemed allowable over the prior art of record as the prior art neither anticipates nor renders obvious at least the combination with the inclusion in the claims of “determining the binary values in the first subset that may be rounded down without violating the performance constraint, thereby forming the second subset.”

17. **With respect to claim 21**, the claim limitations are deemed allowable over the prior art of record as the prior art neither anticipates nor renders obvious at least the combination with the inclusion in the claims wherein “the integer program modeling a data placement problem which seeks to minimize a cost of placing data objects onto nodes of a distributed storage system while meeting a performance requirement for a workload.”

18. **Claims 16 and 22-27** are allowed as being dependent upon, and thus incorporating therein, the allowable subject matter of the respective parent claims.

19. **Claims 17-20** are objected to as above (see paragraphs 7-10), but would be allowable if corrected in accordance with the suggestions above.

### ***Conclusion***

20. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

- Borowsky et al. (US 6,321,317) teaches heuristic optimization methods for storage system configurations.
- Holender et al. (US 6,069,894) teach optimization methods for storage system configurations.

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- Shmoys, et al., "Approximation for Facility Location Problems" teaches optimization methods for facility locations.
- Baev, et al., "Approximation Algorithm for Data Placement in Arbitrary Networks" teaches optimization methods for placing replicated data in storage networks.
- Gupta, et al., "An Edge in Time Saves Nine: LP Rounding Approximation Algorithms for Stochastic Network design" teaches optimization methods for network design.

21. Any inquiry concerning this communication or earlier communications from the examiner should be directed to James Golden whose telephone number is 571-272-5628. The examiner can normally be reached on Monday-Friday, 8:30 AM - 5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Donald Sparks can be reached on 571-272-4201. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

James R. Golden  
Patent Examiner  
Art Unit 2187



Primary Examiner  
Art Unit 2187  
Dec. 12, 2005